

**Claims**

What is claimed is:

1. A process for transitioning from a first polymerization reaction conducted in the presence of a first catalyst to a second polymerization reaction conducted in the presence of a second catalyst wherein the first and second catalysts are incompatible, the process comprising:

- (a) discontinuing the introduction of the first catalyst into a reactor wherein the first catalyst comprises a metallocene catalyst;
- (b) introducing and dispersing in the reactor at least one deactivating agent selected from the group consisting of oxygen, air, carbon monoxide, carbon dioxide, water, oleic acid, and ammonia in an amount sufficient to substantially halt the first polymerization reaction;
- (c) purging the reactor with an inert gas to substantially remove unreacted deactivating agent from the reactor; and
- (d) introducing the second catalyst into the reactor wherein the second catalyst comprises a traditional Ziegler-Natta catalyst.

2. The process of claim 1 wherein the first polymerization reaction and the second polymerization reaction comprise a gas phase process.

3. The process of claim 1 wherein the first polymerization reaction and the second polymerization reaction are conducted in a fluidized bed reactor.

4. The process of claim 1 wherein the process is continuous.

5. The process of claim 1 further comprising introducing a transition agent in the reactor.

6. The process of claim 5 wherein the transition agent is selected from the group consisting of alkoxylated amines and alkoxylated amides.

7. The process of claim 6 wherein the transition agent comprises ethoxylated stearyl amine.

8. The process of claim 7 wherein the transition agent is supported on a solid carrier material.

9. The process of claim 1 wherein the deactivating agent comprises oxygen in an amount approximately equal to or greater than 1 molar equivalent based on the gram-atoms of active metal in the first catalyst.

10. The process of claim 1 wherein steps (b) and (c) are repeated at least one time.

11. The process of claim 1 further comprising introducing in the reactor, prior to the introduction of the second catalyst, a passivating agent in an amount sufficient to effectively passivate the reactor.

12. The process of claim 11 wherein the passivating agent comprises an organometallic compound represented by the formula  $BX_3$  or  $AlR_{(3-a)}X_a$ , where R is a branched or straight chain alkyl, cycloalkyl, heterocycloalkyl, aryl, or a hydride radical having from 1 to 30 carbon atoms, X is a halogen, and a is 0, 1, or 2.

13. The process of claim 12 wherein the passivating agent comprises triethylaluminum.

14. The process of claim 1 wherein water is present in the reactor and prior to the introduction and dispersion of the second catalyst in the reactor, the reactor is purged until the concentration of water vapor in the reactor is less than or equal to 100 parts per million by weight based on the weight of the bed.

15. The process of claim 1 wherein water is present in the reactor and prior to the introduction and dispersion of the second catalyst in the reactor, the reactor is purged until the concentration of water vapor in the reactor is less than or equal to 20 parts per million by reactor volume.

16. A process for transitioning from a first polymerization reaction conducted in the presence of a first catalyst, to a second polymerization reaction conducted in the presence of a second catalyst, wherein the first and second catalysts are incompatible, the process comprising:

(a) discontinuing the introduction of the first catalyst into a reactor wherein the first catalyst comprises a metallocene catalyst;

(b) introducing and dispersing in the reactor the second catalyst in an amount sufficient to substantially halt the first polymerization reaction, wherein the second catalyst comprises a traditional Ziegler-Natta catalyst and wherein the second catalyst is introduced in the absence of any significant amount of an activator or co-catalyst for the second catalyst; and

(c) after the first polymerization reaction is halted by introduction of the second catalyst, introducing into the reactor an activator or co-catalyst for the second catalyst in an amount sufficient to effectively activate the second catalyst.

17. The process of claim 16 wherein the first polymerization reaction and the second polymerization reaction comprise a gas phase process.

18. The process of claim 16 wherein the first polymerization reaction and the second polymerization reaction are conducted in a fluidized bed reactor.

19. The process of claim 16 wherein the process is continuous.

20. The process of claim 16 wherein the activator or co-catalyst for the second catalyst comprises an organometallic compound represented by the formula  $BX_3$  or  $AlR_{(3-a)}X_a$ , where R is a branched or straight chain alkyl, cycloalkyl, heterocycloalkyl, aryl or a hydride radical having from 1 to 30 carbon atoms, x is a halogen, and a is 0, 1, or 2.

21. The process of claim 16 wherein the activator or co-catalyst for the second catalyst comprises triethylaluminum.